



Attorney Docket # 479701-39RE

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Helmut PEISE et al.

Serial No.: 10/815,192

Filed: March 31, 2004

For: Apparatus for Gasification of Combustion and
Waste Materials Containing Carbon and Ash

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION OF DR. MANFRED SCHINGNITZ

DR. MANFRED SCHINGNITZ hereby declares and states:

1. I am an inventor of the above-identified reissue patent application for an apparatus for gasification of combustion and waste materials containing carbon and ash.

2. This declaration is submitted to provide support for the assertion that one skilled in the art of gasification would realize that the term "fluidized-bed reactor" in U.S. Patent No. 5,968,212 is incorrect because that the reactor shown in the drawings filed with the original application 08/954,361, which issued as U.S. Patent No. 5,968,212, and the accompanying description unequivocally disclose an entrained-flow gasification reactor which can not be considered to be a fluidized-bed reactor.

3. Processes employed for gasification of combustion and waste materials are divided into three categories:

- (i) fixed-bed gasification;
- (ii) fluidized-bed gasification; and
- (iii) entrained-flow gasification.

4. In fixed-bed gasification, a bed of solid combustion or waste material pieces is supported on a grate and a fluid, i.e., a gas, flows around the coal pieces.

5. In fluidized-bed reactors, a fluid is passed through a bed of granular solids including the combustion or waste material. Once the velocity of the fluid passes a minimum velocity, incipient fluidization occurs in which the force of the fluid balances the weight of the granular solids. Once the fluid velocity surpasses the minimum velocity, the bed of granular solids become agitated and behaves as though it were a fluid. Thus, the bed in the reactor becomes a fluidized bed.

6. In an entrained-flow gasification reactor, the combustion or waste material to be gasified comprises fine particles that are suspended in a gasifying agent medium in the reactor, such that the gasification occurs in a cloud of fine particles.

7. The reactor shown in Figs. 1, 2, and 3 of the above-identified reissue application fails to disclose any structure that would support a bed of granular solids as required by a fluidized-bed reactor. Accordingly, one skilled in the art of gasification apparatus would appreciate that the terms "fluidized gasification", "fluidized reactor",

"fixed bed reactor", and/or fluidized-bed reactor" do not describe the reactor shown in the Figs. 1, 2, and 3.

8. Furthermore, one skilled in the art would appreciate that the gasification reactor shown in Figs. 1, 2, and 3 of the above-identified reissue application can only be considered to be an entrained flow gasifier because:

(i) the pressure and temperature operating characteristics disclosed at col. 3, lines 22 of the U.S. Patent No. 5,968,212 apply only to entrained flow gasification; and

(ii) the structure of the reactor prohibits the existence of a bed of solids.

9. In view of the above, the replacement of the term "fluidized-bed reactor" with —entrained flow gasification reactor— is supported in the original specification.

10. I declare that all statements made herein of my own knowledge are true; that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful, false statements and the like are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code and that such willful statements may jeopardize the validity of this patent application and any patent resulting therefrom.

Date: 10. 04. 08

By:

Manfred Schingnitz

Dr. Manfred Schingnitz